

Docket No.: 12810-00318-US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Tim Jungkamp et al.

Confirmation No.: 4602

Serial No.: 10/586,500

Art Unit: 1626

Filed: 07/13/2006

Examiner: Joseph R. Kosack

For: METHOD FOR PRODUCING DINITRILES

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REQUEST FOR RECONSIDERATION

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Reconsideration is respectfully requested of the Office Action dated March 3, 2009. In that Office Action all of pending Claims 11-26 were rejected as unpatentable over Walter. It is respectfully submitted, however, that the claims and in particular parent Claim 11 are not obvious in view of Walter.

Walter teaches the hydrocyanation of nonconjugated ethylenically unsaturated organic compounds such as 3-pentenitrile with hydrogen cyanide in the presence of monodentate zerovalent nickel phosphorous ligand complexes and zinc chloride as a promoter leading to adipodinitrile and methylglutarodinitrile. The monodentate zerovalent nickel phosphorous ligand complexes are extracted with cyclohexane from the reaction mixture and cyclohexane is evaporated by distillation.

The distillative recovery of the reaction product after separation of the hydrocyanation catalyst, as defined in parent Claim 11 (steps b, e, f, g and h) is not described in Walter.

The problem to be solved by the instant invention was to lower losses of the reaction product (3-pentenitrile) a process for separating an organic phosphorous (see page 2, lines 19 to 27 of specification).

One of the objects of the invention which is achieved by parent Claim 11 is to avoid losses of product of value, such as losses of 3-pentenitrile for example.

According to the invention, as defined in parent Claim 11, unconverted pentenenitrile is removed from the hydrocyanation effluent and from the extraction effluent and is conjointly distilled such that the cis-2-pentenitrile and E-2-methyl-2-butenitrile in the pentenenitrile isomer mixture can be depleted as overhead product. The 3-pentenitrile obtained as bottom pot product is recycled into the hydrocyanation stage.

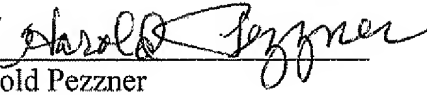
These measures are significant and inventive because the adiponitrile yield can be enhanced by isomerizing the removed cis-2-pentenitrile to 3-pentenitrile.

The removed cis-2-pentenitrile is also a catalyst poison when monodentate Ni(O) phosphorus ligand complexes are used (see specification at page 12, lines 16 to 18).

It was unforeseeable how the extraction of the Ni(O) complexes comprising bidentate phosphorus ligands and the distillative removal of the extractant would proceed. Walter does not disclose the use of Ni(O) complexes with bidentate phosphorus ligands.

In view of the above it is respectfully submitted that the invention, as defined in parent Claim 11 and its dependent claims, is not disclosed in Walter nor would it be obvious from Walter to provide such a process as defined in the claims. Accordingly, reconsideration is respectfully requested of the rejection of Claims 11-26 and it is submitted that this application should be passed to issue.

Respectfully submitted,

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